CLEARWATER
GROUP
Environmental Services

January 6, 2006

FILE COPY

Ms. Joan Fleck, Engineering Geologist
North Coast Regional Water Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403

Re: Quarterly Groundwater Monitoring Report - Fourth Quarter 2005
Former Santa Rosa Imports
900 Santa Rosa Avenue
Santa Rosa, CA 95404
Case No. 1TSR263
Clearwater Project No. AB002G

Dear Ms. Fleck:

Enclosed please find a copy of the *Fourth Quarter 2005 Groundwater Monitoring Report* prepared by the Clearwater Group (Clearwater) for the above-referred site. Should you have any questions, please call me at 510-307-9943 ext. 231.

Sincerely,
Clearwater Group

Jim Ho
Principal Engineer

Cc: Ms. Andrea Jensen, Santa Rosa Fire Department

229 Tewksbury Avenue ◆ Point Richmond, California 94801 ◆ Telephone: 510-307-9943 ◆ Fax: 510-232-2823

CLEARWATER
GROUP
Environmental Services

January 6, 2005

FILE COPY

Ms. Andrea Jensen
Santa Rosa Fire Department
955 Sonoma Avenue
Santa Rosa, CA 95404

Re: Quarterly Groundwater Monitoring Report - Fourth Quarter 2005
Former Santa Rosa Imports
900 Santa Rosa Avenue
Santa Rosa, CA 95404
RWQCB Case No. 1TSR263
Clearwater Project No. AB002G

Dear Ms. Jensen:

Enclosed please find a copy of the *Fourth Quarter2005 Groundwater Monitoring Report* prepared by the Clearwater Group (Clearwater) for the above-referred site. Should you have any questions, please call me at 510-307-9943 ext. 231.

For your information, we will submit the soil remediation permit application when the design for new building is complete for the use of building permit application. Your help on moving this site closure project forward is very appreciated.

Sincerely,
Clearwater Group

Jim Ho
Principal Engineer

Cc: Ms. Joan Fleck
North Coast Regional Water Quality Control Board

229 Tewksbury Avenue ◆ Point Richmond, California 94801 ◆ Telephone: 510-307-9943 ◆ Fax: 510-232-2823

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Ms. Joan Fleck, Engineering Geologist
North Coast Regional Water Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403

Re: Groundwater Monitoring Report - Fourth Quarter 2005
Former Santa Rosa Imports
900 Santa Rosa Avenue
Santa Rosa, CA 95404
RWQCB Case No. 1TSR263
Clearwater Project No. AB002G

Dear Ms. Fleck,

Clearwater Group (Clearwater) has prepared a Groundwater Monitoring Report for the subject site. This report presents the Fourth Quarter 2005 groundwater monitoring activities and associated results. The groundwater samples were collected in accordance with Clearwater's standard environmental field protocols, and were submitted to a California-certified analytical laboratory for analysis of Total Petroleum Hydrocarbons as gasoline (TPH-g), benzene, toluene, ethylbenzene, xylenes (BTEX), and methyl tert-butyl ether (MTBE).

BACKGROUND INFORMATION

Site Description

The site is located on the southeast corner of the intersection of Santa Rosa Avenue and Bennett Valley Road (Figure 1). Highway 12 (elevated) is located north of the site. The elevation of the site is approximately 160 feet above mean sea level (MSL); and regional topography slopes gently to the west-southwest.

The site is paved, leveled, and set in an area of mixed residential and commercial uses. The site is currently used as an automobile smog testing and certification facility.

UST Removal History

The site was previously operated as an automobile service station until 1986. All underground storage tanks (USTs) were removed from four separate excavations at the site by Baseline Environmental Consultants in 1987. The former UST excavation (Excavation #1), located south

of the on-site building, was used to store gasoline (one 2,000-gallon tank). The former UST excavations (Excavations #2 and #4) located on the northern portion of the site were also used to store gasoline (three 550-gallon tanks and one 2,000-gallon tank). One former UST excavation (Excavation #3) located southeast of the on-site building was used to store used motor oil (one 250-gallon tank). Product lines and dispensers were also removed during the tank removal. Former UST excavation sizes and locations are shown in Figure 2.

Limited over-excavation was performed around all former UST pits, except for the Excavation #4 located directly north of the building, which contained three 550-gallon USTs. The results of the excavation soil sample analyses indicated that residual petroleum hydrocarbons were present in soils proximal to each former UST basin. Results of the UST removal were presented in Baseline Environmental Consultants' report dated December 1, 1987.

Investigation History

Between 1989 and 2000, approximately 20 soil borings were drilled and six monitoring wells were installed to determine the extent and level of the contamination resulting from the former USTs. The soil boring and monitoring well locations are also shown in Figure 2. The monitoring well construction data is listed in Table 1.

On 13 December 2001, Clearwater supervised drilling and installation of two remedial test wells that included one dual-phase well (DPW-1) and one air sparging well (AS-1). These two wells were used to perform feasibility tests of soil vapor extraction (SVE) and air sparging along with simultaneous groundwater extraction (GWE).

On 6 and 7 February 2002, Clearwater performed a brief step-drawdown test, combined GWE/SVE tests, and a solo SVE test on DPW-1. It was found that mass recovery rates for SVE were poor based on low airflow rates and relatively low concentrations of extractable petroleum hydrocarbons in the air stream. An air-sparging test was also performed on well AS-1, with unfavorable results obtained due to the low soil permeability.

On 25 and 28 January 2005, Clearwater drilled 12 soil borings to delineate the range and volume of soils to be excavated during upcoming site remediation. All borings were drilled to 16 feet below ground surface (bgs). Based on the analyzed data and previous sampling results performed between 1989 and 2000, impacted soil is found within the interval between eight feet and 15 feet bgs. The estimated total area of soil excavation will be approximately 3,800 square feet. Therefore, approximately 2,110 cubic yards of soil are planned for excavation and will be excavated.

Hydrogeology

The subsurface is generally comprised of clays to a depth of approximately 10 to 15 feet bgs underlain by sandy clays and clayey sands to a depth of at least 20 feet bgs. Also, comparatively, more coarse grain sediments appear between 10 to 15 feet bgs. The sand appears to grade laterally into sandy gravel south and southwest of the site.

Historically, depth to groundwater has ranged from approximately 5 to 16 feet bgs with hydraulic gradients generally toward the southwest direction; although flow direction has been found to range from west-southwest to south-southwest. Table 2 shows the historical water level data in the monitoring wells associated with the subject site.

Contaminants of Concern

The predominant hydrocarbons, which appear to have been released to the subsurface from the former UST systems, consist of gasoline compounds because no diesel tanks were used on site. Specific compounds or compound groups, which have been consistently detected, include TPH-g and BTEX. Although MTBE has been detected previously using EPA Method 8020, confirmation analyses by EPA Method 8260B indicate that this compound is not present at detectable levels. Quarterly monitoring since March 2001 by EPA Method 8260B has detected MTBE in monitoring well MW-5, with a maximum concentration of 2.4 microgram per liter (µg/L) sampled in November 2001. Therefore, TPH-g and BTEX are the contaminants of concern at the site. Cumulative groundwater analytical data is also included in Table 2.

Estimated Mass of Dissolved-Phase Hydrocarbons

The extent of dissolved-phase hydrocarbon compounds in the groundwater has been delineated. The center of the plume appears to be located in the area around and immediately downgradient from the former UST systems monitored by wells MW-1 and MW-2.

The total mass of the dissolved-phase hydrocarbons plume has been estimated based on the historical maximum TPH-g and benzene concentrations of 140,000 µg/L and 6,200 µg/L, respectively, sampled in monitoring well MW-2 in March 2001. The range of the dissolved-phase TPH-g plume is estimated to have a lateral length of approximately 250 feet along the predominant flow direction, and a transverse length of approximately 175 feet perpendicular to the principal gradient. As a result, the estimated total mass of dissolved-phase hydrocarbons in groundwater is approximately 65 lb, which is equivalent to 11 gallons of gasoline.

Estimated Volume of Sorbed-Phase Hydrocarbons To Be Excavated

The "footprint" of sorbed-phase hydrocarbons in soil had been previously delineated as an ellipse with a principle axis toward the southwest direction. The lateral extent of impacted soil was limited mostly to beneath the subject property. Based on the most recent 25 and 28 January 2005 soil sampling results, the estimated aerial extent of soil impacted with sorbed-phase hydrocarbon compounds that required excavation was approximately 3,800 square feet. The sorbed-phase concentrations appear to be highest at the average depth of the capillary fringe (i.e. approximately 10 feet bgs). However, the detectable soil concentrations generally ranged from approximately eight to 15 feet bgs (7 feet thick). Based on the above data, approximately 26,600 ft^3 (990 cubic yards) of impacted soil under the site will be excavated and backfilled with clean soil. The other excavated soil above eight feet bgs is presumably not impacted and will be sampled and reused as backfill pending approval by the geotechnical engineer.

QUARTERLY MONITORING ACTIVITIES

Groundwater Gauging

On 8 November 2005, Clearwater performed groundwater monitoring on six monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6. An electronic water level indicator was used to measure depth to water in the wells prior to purging and sampling. All wells were checked for the presence of Light Non-Aqueous Phase Liquid (LNAPL) prior to purging. All groundwater gauging and sampling work was performed in accordance with Clearwater's Groundwater Monitoring and Sampling Field Procedures presented in Appendix A.

Groundwater Purging

The above wells were purged of groundwater until water quality parameters including temperature, pH, and conductivity stabilized. Stabilization occurred upon removal of approximately three wet casing volumes. Groundwater quality parameters and well purging information were recorded in the field. The recorded gauging and purging data are presented in Appendix B.

Purging devices were decontaminated between wells in an Alconox® wash followed by double rinsing with clean tap water to prevent cross-contamination. Purge water and rinseate were stored in labeled 55-gallon drums and removed from the site for future disposal.

Groundwater Sampling

Following recovery of water levels to at least 80% of their static levels after purging, groundwater samples were collected from the monitoring wells using disposable polyethylene bailers. Samples were labeled, documented on a chain-of-custody form, and placed on wet ice in a chilled cooler for transport to the analytical laboratory.

Laboratory Analysis

Groundwater samples were analyzed by Kiff Analytical, a California State-certified laboratory located in Davis, California, for concentrations of TPH-g, BTEX, and MTBE using EPA Method 8260B.

QUARTERLY MONITORING RESULTS

During the Fourth Quarter 2005 monitoring event, water purged from wells MW-1 and MW-3 not only had high turbidity with gray color but also had sheen and strong odors detected. Conversely, the purged water from wells MW-4 through MW-6 had low turbidity with light brown color. Also, no sheen and odors were detected in these last three wells. Most wells had good groundwater recharge after purging except for well MW-3. Most importantly, a thin layer of gasoline was observed in well MW-2. As a result, no groundwater was sampled from this well during this monitoring event.

Groundwater Elevation and Flow

The depth to water ranged from approximately 11.03 feet bgs (MW-2) to 14.35 feet bgs (MW-5). As observed during the Third and Fourth Quarter 2004 and the First through Third Quarter 2005 events, monitoring wells MW-2 and MW-5, respectively, once again had a minimum and a maximum depth to water found during this quarterly event. Overall groundwater elevation observed in this quarter was approximately 1.2 feet lower than the elevation observed in the Third Quarter 2005. Depth to water data combined with casing elevation data were used to construct a groundwater elevation map, which is shown in Figure 3. Similar to the results obtained from the Third and Fourth Quarter of 2004 and the First through Third Quarter 2005, the groundwater elevation contours determined for this quarter suggest that a groundwater "mound" likely exists at the site near MW-2. However, the predominant groundwater flow during this quarter was in the southerly direction. The calculated horizontal hydraulic gradient in the southerly direction was approximately 0.02 ft/ft.

Laboratory Analytical Results

Based on the historical sampling results, the area near monitoring wells M-W1 and MW-2 has been identified as the center of the TPH-g plume. During this monitoring event, no groundwater was sampled from well MW-2 due to the presence of gasoline LNAPL in this well. Also, the TPH-g concentration in well MW-1 increased slightly from 26,000 to 28,000 µg/L. Although groundwater was not sampled from well MW-2, due to the presence of gasoline LNAPL in this well, the center of the TPH-g plume is still located near wells MW-1 and MW-2. It is worth noting that the THP-g concentration detected in downgradient monitoring well MW-3 once again significantly increased from 1,500 µg/L (Third Quarter 2005) to 4,200 µg/L. Similarly, the BTEX concentrations in wells MW-1 and MW-3 also slightly increased. All the TPH-g and BTEX concentrations in down gradient wells MW-4 through MW-6, however, are less than their detection limits. The MTBE concentration was also less than the Method Reporting Limit (0.5 µg/L) in all wells.

TPH-g and benzene concentration contours are plotted in Figures 4 and 5. The sample analytical data for this quarterly monitoring event are also included in Table 2. Copies of the laboratory report and chain-of-custody form are attached in Appendix C.

Evaluation of Hydrocarbon Degradation

Natural attenuation often exists within a petroleum hydrocarbon plume, which is demonstrated with a reduction of hydrocarbon concentrations over time. It occurs especially at a site that has experienced source removal and/or active remediation, so that natural attenuation processes have overtaken the rate at which contaminants partition from the sorbed-phase into the dissolved-phase. Degradation of hydrocarbons often takes place at the "first-order" rate. The degradation constants can be estimated using either observed contaminant concentrations from monitoring wells or estimated plume mass, if the plume has been delineated.

First-order decay rates for TPH-g and benzene beneath this site have been estimated using historical monitoring data obtained from wells MW-1, MW-2 and MW-3. Degradation rate constants for TPH-g and benzene were determined by fitting an exponential curve with the concentrations sampled from each well against time. Estimated degradation rate constants for TPH-g and benzene of each well are presented in Figures 6A, 6B, and 6C. The estimated first-order degradation rate constants for benzene in wells MW-1, MW-2, and MW-3 are 0.03 per day, 0.07 per day, and 0.19 per day, respectively; and the estimated rate constants for TPH-g in MW-1, MW-2, and MW-3 are 0.03 per day; 0.01 per day; and 0.17 per day, respectively. Comparing the estimated degradation constants determined from these three wells, both TPH-g and benzene degrade faster in the down gradient area near MW-3. Because monitoring wells MW-1 and MW-2 are closer to the former USTs area, biodegradation near the former USTs area is either insignificant or anaerobic. This postulation is consistent with the hydrocarbon distributions presented in Figures 4 and 5.

FINDINGS

Based on the Fourth Quarter 2005 groundwater monitoring data, the following findings were derived:

- Due to the appearance of the low groundwater flow regime during this quarterly monitoring event, the principal groundwater flow direction has shifted from the southwesterly to the southerly direction. The calculated horizontal hydraulic gradient associated with the principal groundwater flow is approximately 0.02 ft/ft. This observation suggests that the underground lithology is heterogeneous in the vertical direction.

- For over two years since June 2003, either sheen or gasoline LNAPL has constantly appeared in monitoring wells MW-1 and MW-2; areas near these monitoring wells have been identified as the center of the hydrocarbons plume. This indicates the existence of residual separate phase hydrocarbons in these subsurface areas, and the center of the plume has not shifted.

- Although both the TPH-g and BTEX concentrations in monitoring wells MW-1 and MW-3 increased during this quarterly monitoring event, the concentrations of these compounds remained undetected in down gradient wells MW-4 through MW-6 wells. This observation also suggests that both residual separate phase hydrocarbons and dissolved constituents do not significantly migrate away from the subject site due to the predominance of clayey materials in the subsurface.

- It is likely that natural attenuation exists in some places in the subsurface. However, biodegradation near the former USTs area is either insignificant or anaerobic due to the presence of residual separate phase hydrocarbons.

CONCLUSIONS

- Both the magnitude and ratio of the degradation rates of TPH-g and benzene determined from the monitoring wells MW-1 through MW-3 suggest that the former UST areas may still be a source of groundwater contamination.

- Historical data shows that LNAPL tends to be present in monitoring well MW-2 when the groundwater elevation is low. This observation suggests that residual hydrocarbons may still exist within the source area or the capillary fringe.

RECOMMENDATIONS

- MTBE analysis is not needed because the historical maximum concentration was only 2.4 µg/L sampled in monitoring well MW-5 (November 2001). All detected MTBE concentrations are less than the Maximum Contaminant Level of 5 µg/L since the First Quarter 2002.

- Remediation of the source area by the approved soil excavation method should be performed as soon as possible.

- Quarterly groundwater monitoring shall continue prior to and after soil remediation until the site is ready for closure.

PROJECT STATUS AND FORECAST ACTIVITIES

Clearwater will implement the site remediation described in the Remedial Action Plan (RAP) submitted on 7 January 2005 and approved by NCRWQCB on May 13, 2005. Site remediation will include building demolition, hoist removal, soil excavation, dewatering of the excavation area, off-site disposal, and backfill of clean soil. The application for the soil excavation permit will be submitted in January or February 2006 after the design of the future new building is complete and the building permit application is approved. Quarterly groundwater monitoring will continue until the site is ready for closure.

ATTACHMENTS

FIGURES

Figure 1 – Site Vicinity Map
Figure 2 – Site Plan
Figure 3 – Groundwater Elevation and Groundwater Contour Map (November 8, 2005)
Figure 4 – TPH-g Iso-concentration Contour Map (November 8, 2005)
Figure 5 – Benzene Iso-concentration Contour Map (November 8, 2005)
Figure 6A – Empirical Evaluation of First-Order Decay Rate
(MW-1: TPH-g and Benzene vs. Time)

TABLES

APPENDICES

CLEARWATER
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Environmental Services

CERTIFICATION

This report was prepared under the supervision of a professional State of California Registered Geologist at Clearwater Group. All statements, conclusions and recommendations are based solely upon published results from previous consultants, field observations by Clearwater Group and laboratory analysis performed by a California DHS-certified laboratory related to the work performed by Clearwater Group.

Information and interpretation presented herein are for the sole use of the client and regulating agency. The information and interpretation contained in this document should not be relied upon by a third party.

The service performed by Clearwater Group has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the site. No other warranty, expressed or implied, is made.

Sincerely,
Clearwater Group

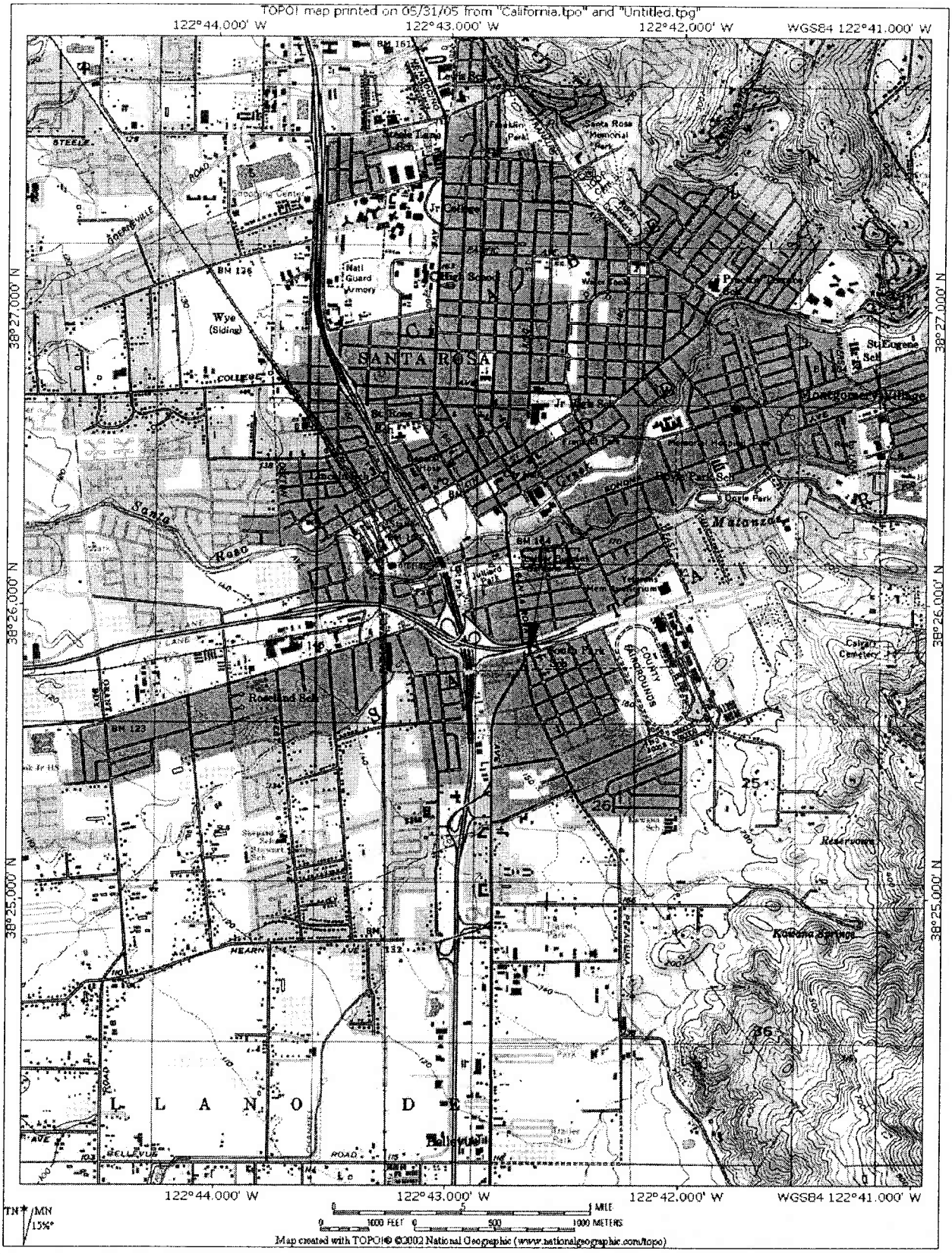
Jim Ho, Ph.D., P.E., CGWP
Principal Engineer

James A. Jacobs, PG#4815, CHG#08
Chief Hydrogeologist

PROFESSIONAL GEOLOGIST
JAMES ALAN JACOBS
NO. 08
CERTIFIED HYDROGEOLOGIST
STATE OF CALIFORNIA

cc: Mr. Franklin Wolmuth, P.O. Box 640551, San Francisco, CA 94164-0551
Ms. Andrea Jensen, Santa Rosa Fire Department, 955 Sonoma Avenue, Santa Rosa, CA 95404

FIGURES

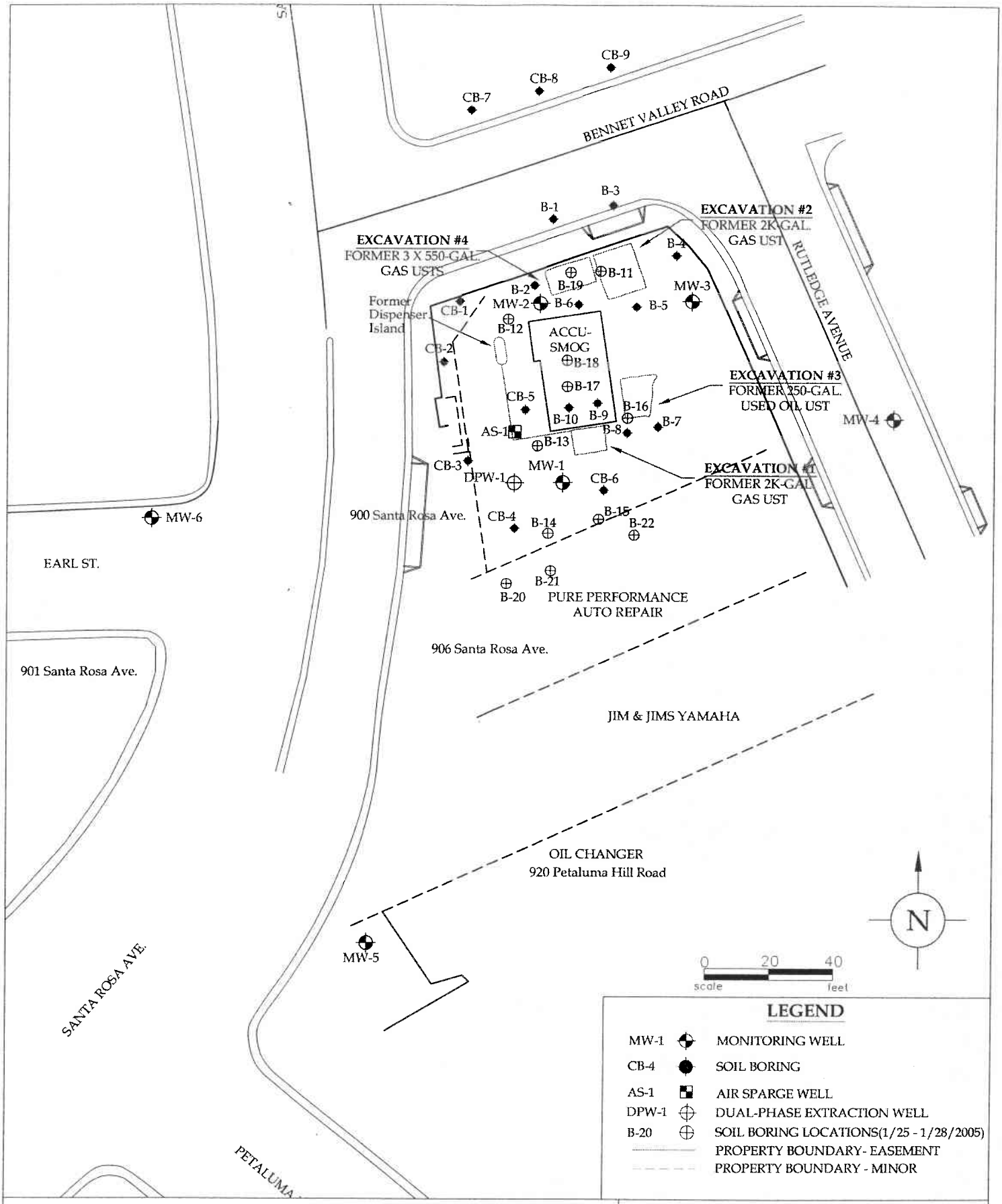


SITE VICINITY MAP

900 Santa Rosa Ave.
Santa Rosa, CA

CLEARWATER GROUP

Project No.	Figure Date	Figure
AB002G	**12/05**	**1**

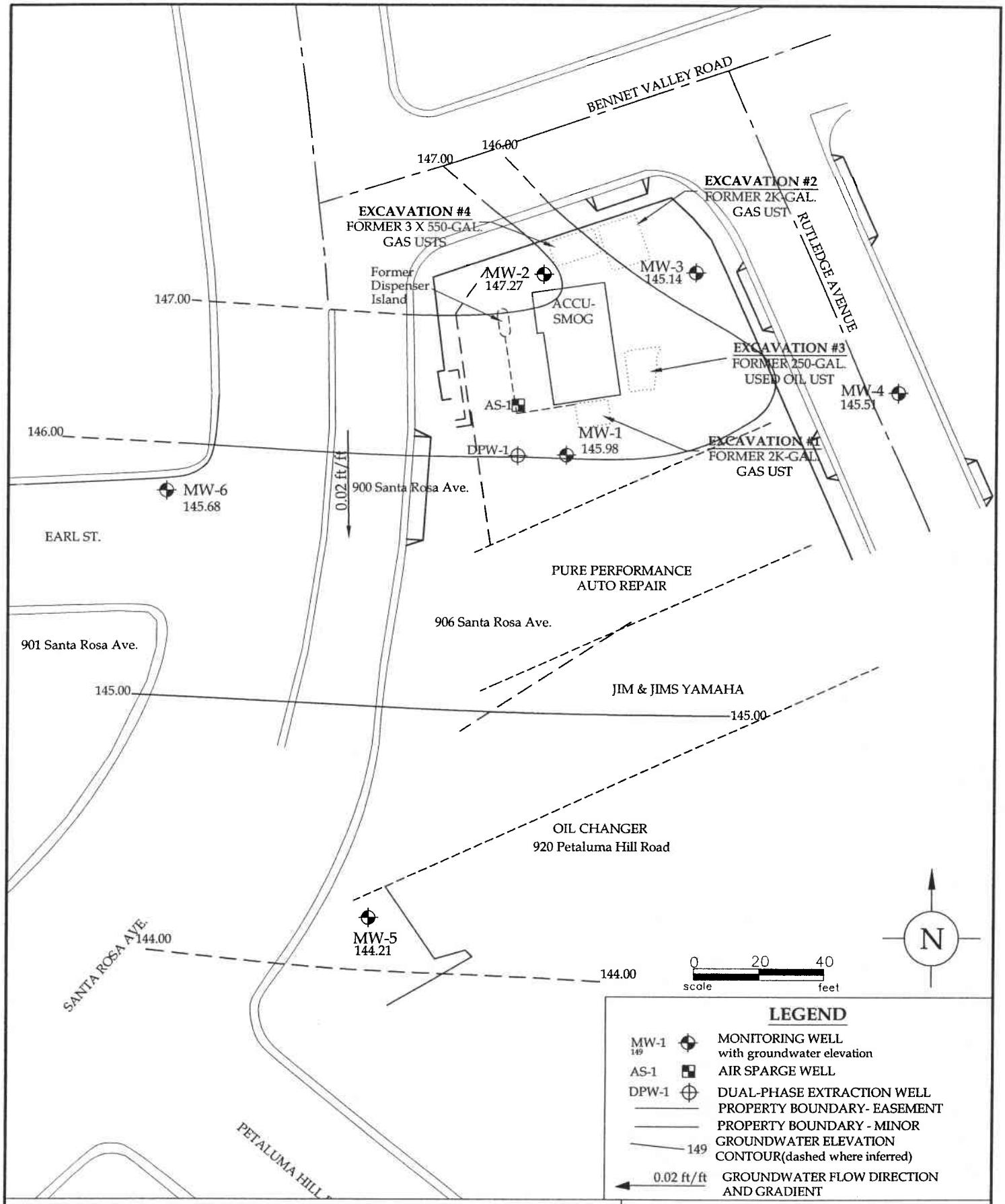


SITE PLAN

900 Santa Rosa Ave.
Santa Rosa, CA

CLEARWATER GROUP

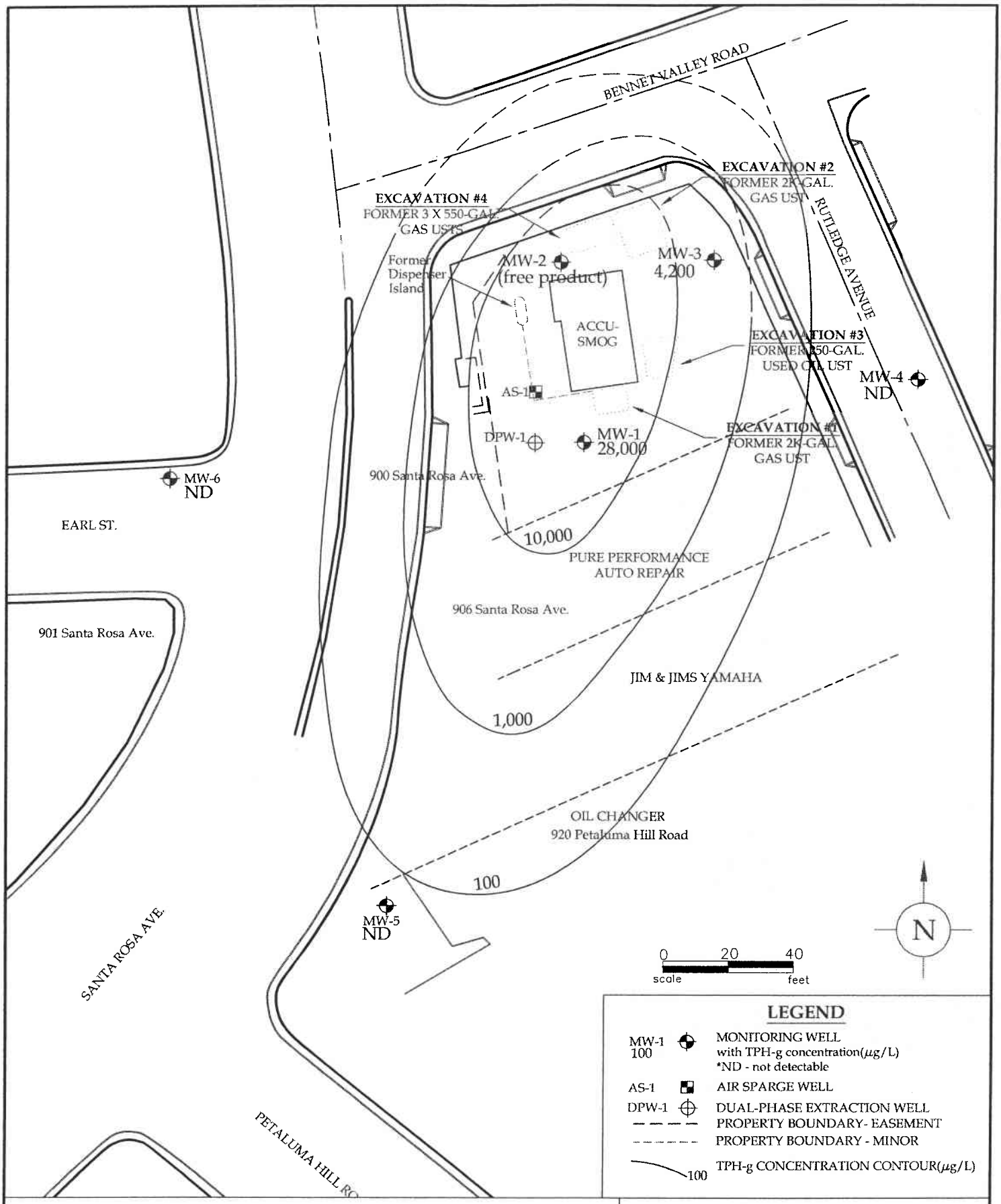
Project No.	Figure Date	Figure
AB002G	**12/05**	**2**



GROUNDWATER ELEVATION & GROUNDWATER CONTOUR MAP
November 8, 2005
900 Santa Rosa Ave.
Santa Rosa, CA

CLEARWATER GROUP

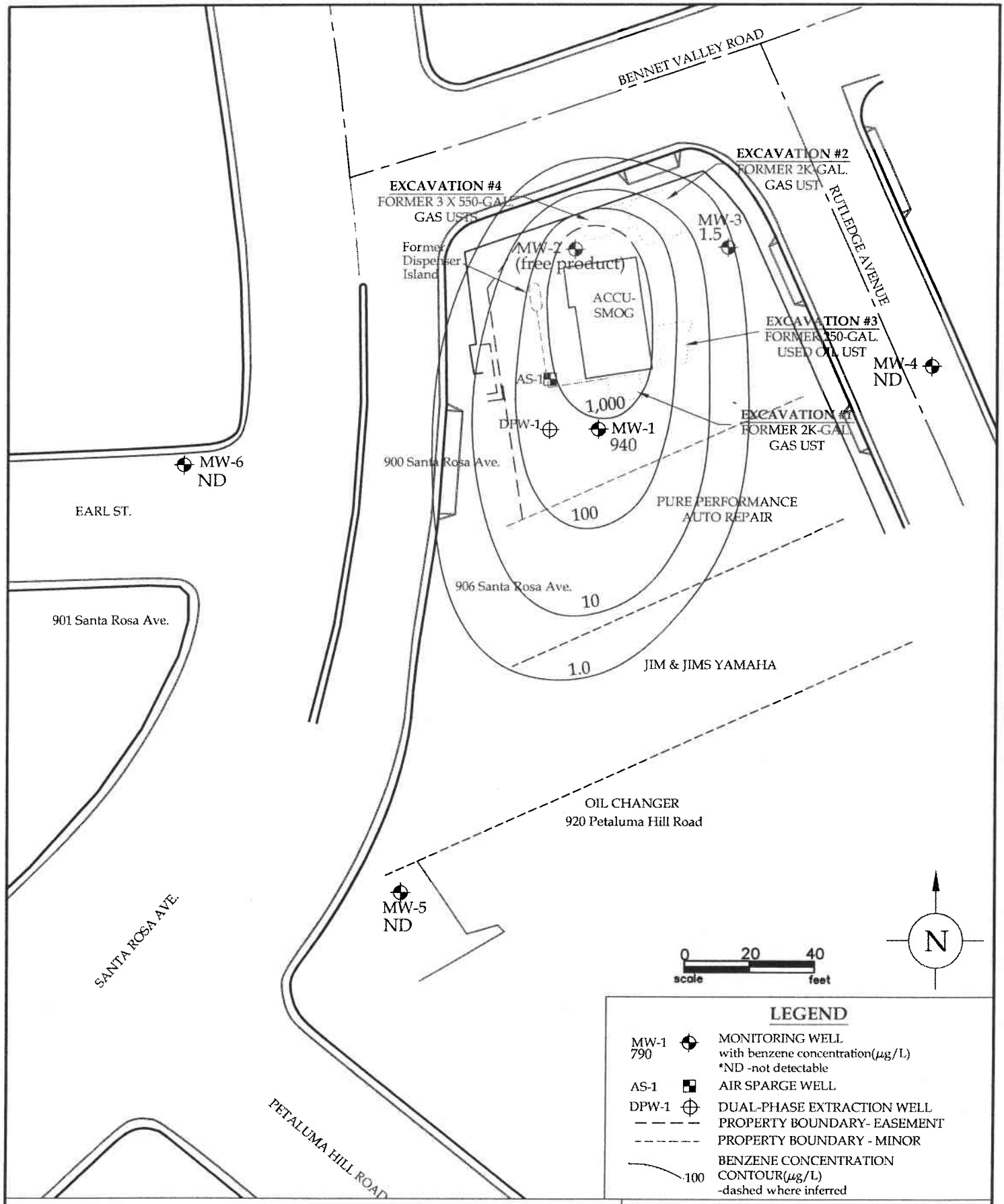
Project No.	Figure Date	Figure
AB002G	12/05	3



TPH-g ISO-CONCENTRATION CONTOUR MAP
November 8, 2005
900 Santa Rosa Ave.
Santa Rosa, CA

CLEARWATER GROUP

Project No.	Figure Date	Figure
AB002G	**12/05**	**4**



BENZENE ISO-CONCENTRATION CONTOUR MAP

November 8, 2005

900 Santa Rosa Ave.
Santa Rosa, CA

CLEARWATER GROUP

Project No.	Figure Date	Figure
AB002G	**12/05**	**5**

Figure 6A
Empirical Evaluation of First-Order Decay Rates
MW-1: TPHg and Benzene vs. Time
Former Spaceco Storage
900 Santa Rosa Avenue, Santa Rosa, CA

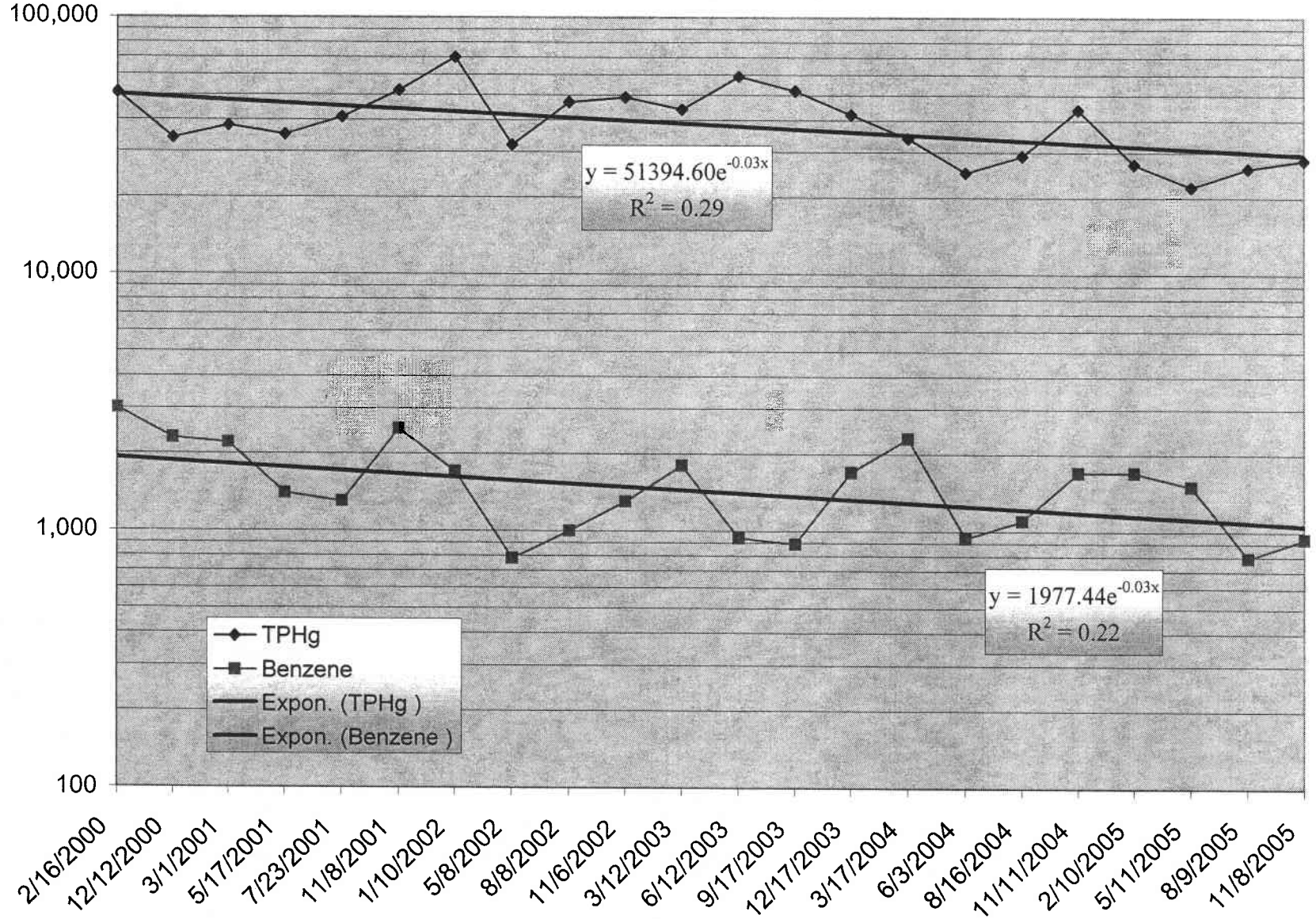


Figure 6B
Empirical Evaluation of First-Order Decay Rates
MW-2: TPHg and Benzene vs. Time
Former Spaceco Storage
900 Santa Rosa Avenue, Santa Rosa, CA

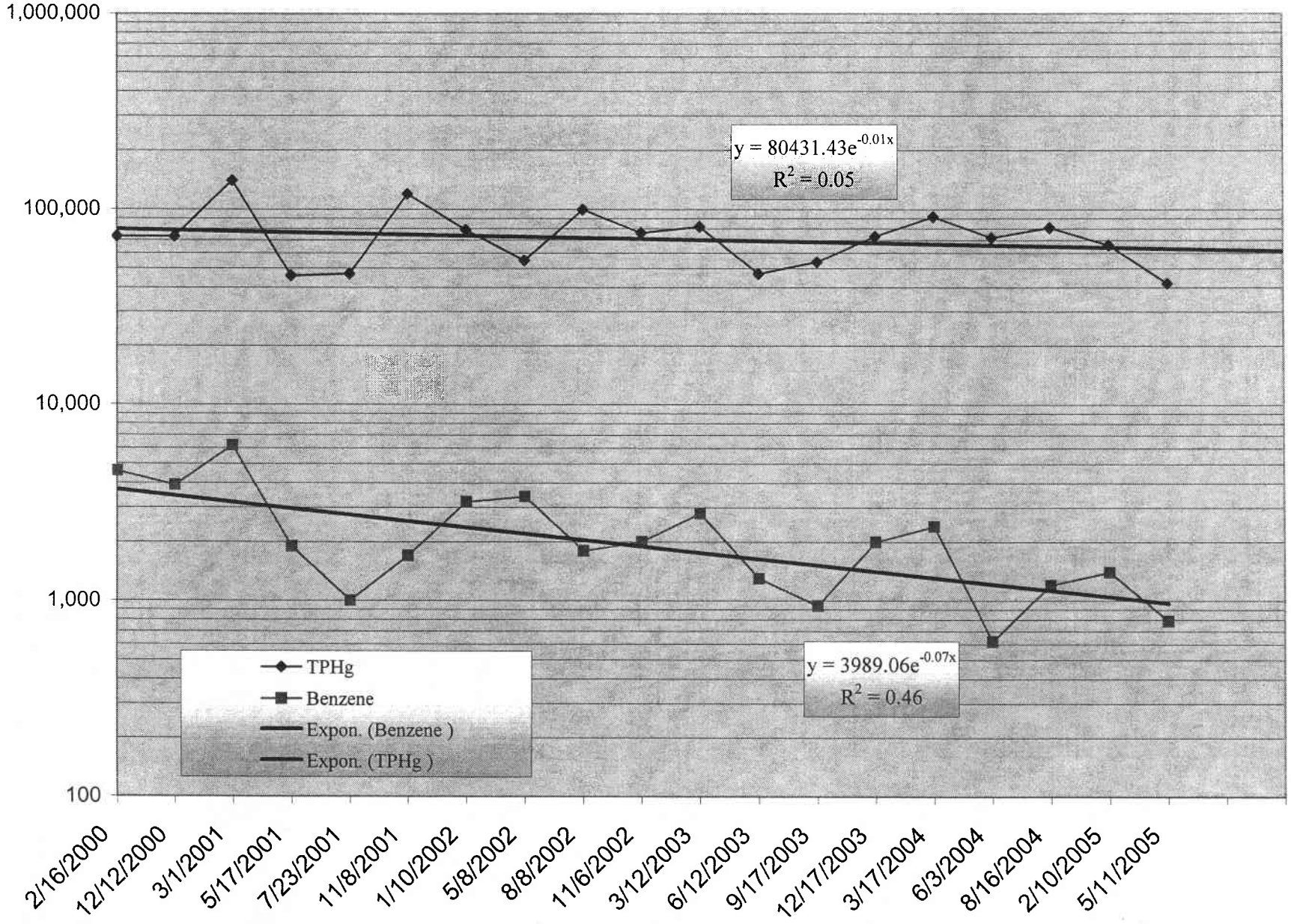
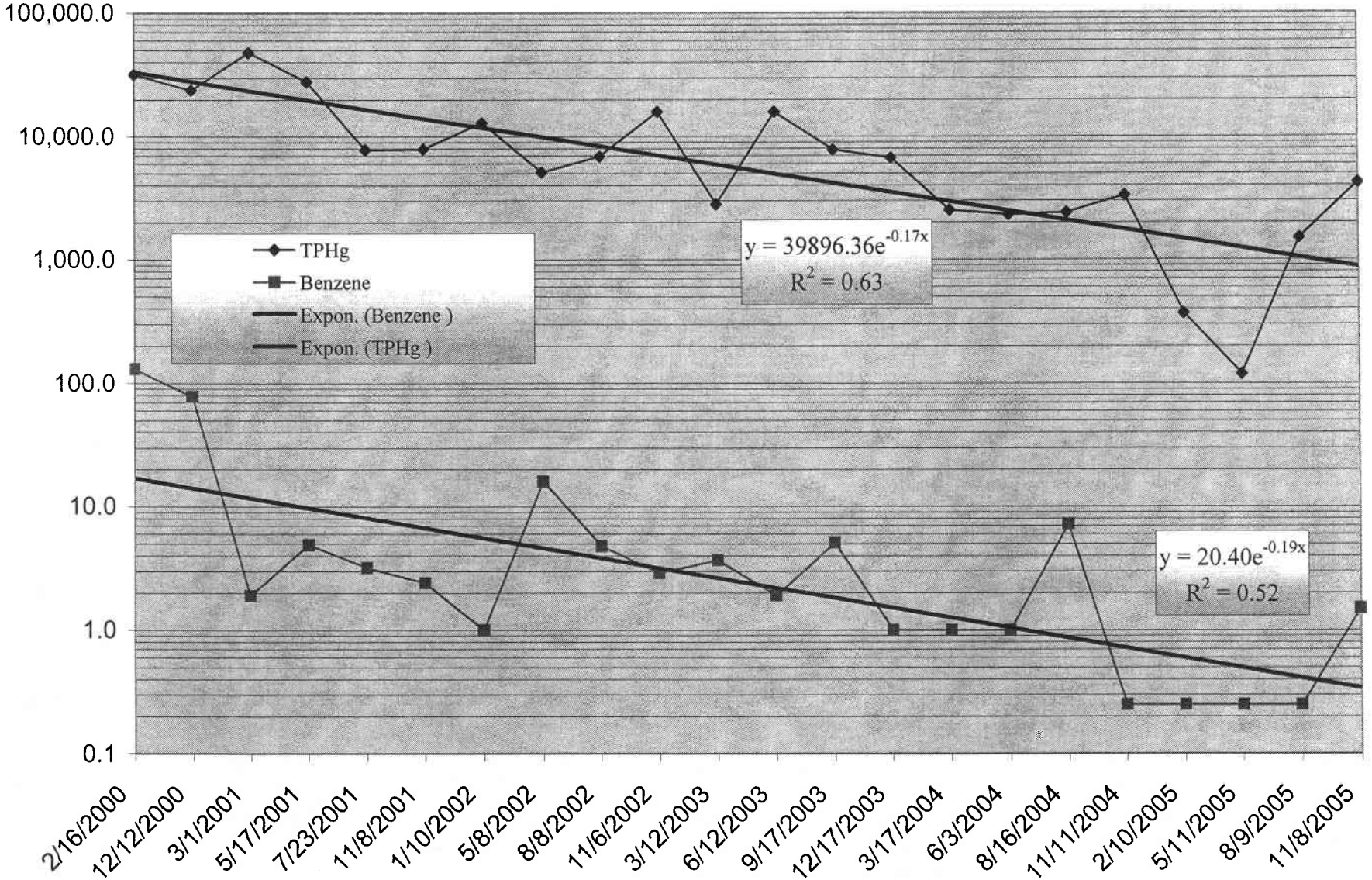


Figure 6C
Empirical Evaluation of First Order Decay Rates
MW-3: TPHg and Benzene vs. Time
Former Spaceco Storage
900 Santa Rosa Avenue, Santa Rosa, CA



TABLES

Table 1
WELL CONSTRUCTION DATA
900 Santa Rosa Avenue
Santa Rosa, California
Clearwater Project No. AB002C

Well I.D.	Date Intstalled	Borehole Diameter (inches)	Depth of Borehole (feet)	Casing Diameter (inches)	Screened Interval (feet)	Filter Pack (feet)	Bentonite Seal (feet)	Cement (feet)
MW-1	12/30/1993	8	15.0	2	5-15	4-20	3-4	0-3
MW-2	2/14/2000	8	20.0	2	5-20	4-20	2-4	0-2
MW-3	2/14/2000	8	20.0	2	5-20	4-20	2-4	0-2
MW-4	12/4/2000	8	20.0	2	5-20	4-20	2-4	0-2
MW-5	12/4/2000	8	20.0	2	5-20	4-20	2-4	0-2
MW-6	12/4/2000	8	20.0	2	5-20	4-20	2-4	0-2

Note: All the depths and intervals are measured below ground surface

Table 2
GROUNDWATER ELEVATIONS AND ANALYTICAL DATA
900 Santa Rosa Avenue, Santa Rosa, California
Clearwater Job No.AB002C

Well No.	Date	TOC (feet)	DTW (feet)	LNAPL (feet)	GWE (feet)	TPHd (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Oxygenates (µg/L)	Pb Scavengers (µg/L)
MW-1	1/7/94+	160.00	~11.50	0.00	--	14,000^	76,000	6,000	2,300	3,200	16,000	--	--	--
	12/4/1996	160.00	10.15	sheen	149.85	<50	44,000	3,100	570	3,000	11,000	400*	--	--
	2/16/2000	160.00	7.09	sheen	152.91	--	51,000	3,000	590	3,800	9,300	<500*	--	--
	12/12/2000	160.00	11.30	sheen	148.70	--	34,000	2,300	360	3,300	6,900	<500*	--	--
	3/1/2001	158.50	6.81	sheen	151.69	--	38,000	2,200	300	3,400	5,500	<10	<10 to <100	<10
	5/17/2001	158.50	8.19	0.00	150.31	--	35,000	1,400	98	2,800	2,900	<10	--	--
	7/23/2001	158.50	10.20	0.00	148.30	--	41,000	1,300	110	3,200	3,500	<5.0	--	--
	11/8/2001	158.50	12.86	sheen	145.64	--	52,000	2,500	370	3,600	6,400	<20	--	--
	1/10/2002	158.50	6.89	0.00	151.61	--	70,000	1,700	210	2,700	4,200	<10	--	--
	5/8/2002	158.50	7.71	0.00	150.79	--	32,000**	780	100	2,600	2,100	<250***	--	--
	8/8/2002	158.50	11.15	0.00	147.35	--	47,000	1,000	110	3,400	2,400	<20	--	--
	11/6/2002	158.50	12.52	0.00	145.98	--	49,000	1,300	180	3,400	3,300	<200***	--	--
	3/12/2003	158.50	7.12	0.00	151.38	--	44,000	1,800	120	3,100	2,200	<20	--	--
	6/12/2003	158.50	7.60	sheen	150.90	--	59,000	940	100	2,700	1,700	<10	--	--
	9/17/2003	158.50	10.80	sheen	147.70	--	52,000	890	110	3,500	2,200	<10	--	--
	12/17/2003	158.50	10.70	sheen	147.80	--	42,000	1,700	160	2,700	2,100	<10	--	--
	3/17/2004	158.50	6.47	sheen	152.03	--	34,000	2,300	91	1,800	640	<10	--	--
	6/3/2004	158.50	8.93	sheen	149.57	--	25,000	940	78	1,800	430	<4.0	--	--
	8/16/2004	158.50	11.72	sheen	146.78	--	29,000	1,100	90	2,300	600	<10	--	--
	11/11/2004	158.50	11.57	sheen	146.93	--	44,000	1,700	180	3,000	1,500	<10	--	--
	2/10/2005	158.50	6.97	sheen	151.53	--	27,000	1,700	92	2,400	410	<5.0	--	--
	5/11/2005	158.50	6.06	sheen	152.44	--	22,000	1,500	87	1,800	180	<4.0	--	--
	8/9/2005	158.50	9.28	sheen	149.22	--	26,000	790	62	1,700	170	<4.0	--	--
	11/8/2005	**158.50**	**12.52**	**sheen**	**145.98**	**--**	**28,000**	**940**	**100**	**2,600**	**630**	**<4.0**	**--**	**--**
MW-2	2/16/2000	159.80	5.81	sheen	153.99	--	73,000	4,600	6,900	3,200	13,000	440*	--	--
	12/12/2000	159.80	11.47	sheen	148.33	--	73,000	3,900	2,600	2,900	8,700	<2,500*	--	--
	3/1/2001	158.30	6.49	sheen	151.81	--	140,000	6,200	4,600	4,000	13,000	<20	<20 to <200	<20
	5/17/2001	158.30	7.25	0.00	151.05	--	46,000	1,900	2,100	2,800	7,700	<5.0	--	--
	7/23/2001	158.30	9.30	0.00	149.00	--	47,000	1,000	1,100	2,400	5,800	<10	--	--
	11/8/2001	158.30	11.85	0.01	146.45	--	120,000	1,700	1,700	3,300	11,000	<20	--	--
	1/10/2002	158.30	7.18	0.00	151.12	--	79,000	3,200	2,100	2,800	7,400	<10	--	--
	5/8/2002	158.30	7.70	0.00	150.60	--	55,000**	3,400	2,700	3,000	7,700	<250***	--	--
	8/8/2002	158.30	9.32	0.00	148.98	--	100,000	1,800	1,300	3,800	7,600	<20	--	--
	11/6/2002	158.30	10.89	0.00	147.41	--	76,000	2,000	940	2,900	6,500	<100***	--	--

Table 2
GROUNDWATER ELEVATIONS AND ANALYTICAL DATA
900 Santa Rosa Avenue, Santa Rosa, California
Clearwater Job No.AB002C

Well No.	Date	TOC (feet)	DTW (feet)	LNAPL (feet)	GWE (feet)	TPHd (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Oxygenates (µg/L)	Pb Scavengers (µg/L)
MW-2	3/12/2003	158.30	6.69	0.00	151.61	--	82,000	2,800	1,600	3,700	9,700	<20	--	--
	6/12/2003	158.30	6.43	sheen	151.87	--	47,000	1,300	730	2,900	4,800	<10	--	--
	9/17/2003	158.30	9.66	sheen	148.64	--	54,000	940	670	3,000	5,400	<10	--	--
	12/17/2003	158.30	8.92	sheen	149.38	--	2400000 J	2,000	810	3,100	7,100	<10	--	--
	3/17/2004	158.30	5.78	sheen	152.52	--	92,000	2,400	810	3,100	5,800	<10	--	--
	6/3/2004	158.30	7.98	sheen	150.32	--	72,000	620	390	2,500	4,400	<10	--	--
	8/16/2004	158.30	10.94	sheen	147.36	--	81,000	1,200	670	4,900	7,300	<10	--	--
	11/11/2004	158.30	9.87	0.01	148.43	--	--	--	--	--	--	--	--	--
	2/10/2005	158.30	6.14	sheen	152.16	--	66,000	1,400	530	3,400	5,300	<7.0	--	--
	5/11/2005	158.30	5.05	sheen	153.25	--	42,000	790	370	2,300	4,000	<7.0	--	--
	8/9/2005	158.30	8.44(*)	0.24	149.86	--	--	--	--	--	--	--	--	--
	11/8/2005	**158.30**	**11.03**	**F.P.**	**147.27**	--	--	--	--	--	--	--	--	--
MW-3	2/16/2000	160.48	6.63	sheen	153.85	--	32,000	130	240	1,200	2,500	890*	--	--
	12/12/2000	160.48	12.81	sheen	147.67	--	24,000	78	140	340	760	<500*	--	--
	3/1/2001	159.00	7.02	0.00	151.98	--	48,000	<2.0	10	240	310	<2.0	<2.0 to <20	<2.0
	5/17/2001	159.00	9.33	0.00	149.67	--	28,000	<5.0	8.1	140	160	<5.0	--	--
	7/23/2001	159.00	12.25	0.00	146.75	--	7,800	3.2	2.5	170	190	<1.0	--	--
	11/8/2001	159.00	14.81	sheen	144.19	--	7,900	<2.5	<2.5	74	77	<2.5	--	--
	1/10/2002	159.00	7.41	0.00	151.59	--	13,000	<0.50	2.2	74	65	<0.50	--	--
	5/8/2002	159.00	8.53	0.00	150.47	--	5,100**	16	20	66	62	<25***	--	--
	8/8/2002	159.00	11.92	0.00	147.08	--	6,900	4.8	1.6	23	15	<1.0	--	--
	11/6/2002	159.00	14.46	0.00	144.54	--	16,000	<3****	<2	33	19	<20	--	--
	3/12/2003	159.00	7.61	0.00	151.39	--	2,800	3.7	<0.50	11	7.4	<0.50	--	--
	6/12/2003	159.00	7.30	0.00	151.70	--	16,000	1.9	2.1	55	33.0	<0.50	--	--
	9/17/2003	159.00	12.65	0.00	146.35	--	7,800 J	5.1	<5.0	18	6.3	<5.0	--	--
	12/17/2003	159.00	10.35	sheen	148.65	--	6,700	0.6	1.5	35	20.0	<0.5	--	--
	3/17/2004	159.00	6.91	sheen	152.09	--	2,500	<0.5	<0.5	8	4.1	<0.5	--	--
	6/3/2004	159.00	9.85	0.00	149.15	--	2,300	<0.5	0.6	8	5.8	<0.5	--	--
	8/16/2004	159.00	13.83	sheen	145.17	--	2,400	7.2	3.0	21	8.0	<0.5	--	--
	11/11/2004	159.00	12.17	sheen	146.83	--	3,300	<0.5	1.2	22	9.7	<0.5	--	--
	2/10/2005	159.00	7.45	sheen	151.55	--	370	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
	5/11/2005	159.00	6.18	0.00	152.82	--	120	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
	8/9/2005	159.00	10.15	sheen	148.85	--	1,500	<0.5	<0.5	3.5	1.0	<0.5	--	--
	11/8/2005	**159.00**	**13.86**	**sheen**	**145.14**	--	**4,200**	**1.5**	**1.6**	**36**	**12**	**<0.50**	--	--

Table 2
GROUNDWATER ELEVATIONS AND ANALYTICAL DATA
900 Santa Rosa Avenue, Santa Rosa, California
Clearwater Job No.AB002C

Well No.	Date	TOC (feet)	DTW (feet)	LNAPL (feet)	GWE (feet)	TPHd (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Oxygenates (µg/L)	Pb Scavengers (µg/L)
MW-4	12/12/2000	160.12	12.19	0.00	147.93	--	<50	<0.50	<0.50	<0.50	<0.50	<5.0*	--	--
	3/1/2001	158.69	6.34	0.00	152.35	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 to <5.0	<0.50
	5/17/2001	158.69	8.81	0.00	149.88	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	7/23/2001	158.69	11.86	0.00	146.83	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	11/8/2001	158.69	14.24	0.00	144.45	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	1/10/2002	158.69	7.18	0.00	151.51	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	5/8/2002	158.69	7.52	0.00	151.17	--	<50**	<0.50	<0.50	<0.50	<1.0	<5.0	--	--
	8/8/2002	158.69	11.76	0.00	146.93	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	11/6/2002	158.69	14.76	0.00	143.93	--	<50	<0.50	<0.50	<0.50	<0.50	<5.0	--	--
	3/12/2003	158.69	6.76	0.00	151.93	--	<50	<0.50	<0.50	<0.50	<0.50	<5.0	--	--
	6/12/2003	158.69	7.93	0.00	150.76	--	<50	<0.50	<0.50	<0.50	<0.50	<5.0	--	--
	9/17/2003	158.69	12.40	0.00	146.29	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	12/17/2003	158.69	9.86	0.00	148.83	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	3/17/2004	158.69	6.19	0.00	152.50	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	6/3/2004	158.69	9.28	0.00	149.41	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	8/16/2004	158.69	13.06	0.00	145.63	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	11/11/2004	158.69	11.43	0.00	147.26	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	2/10/2005	158.69	6.62	0.00	152.07	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	5/11/2005	158.69	5.58	0.00	153.11	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	8/9/2005	158.69	9.42	0.00	149.27	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	8/9/2005	158.69	9.42	0.00	149.27	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	11/8/2005	**158.69**	**13.18**	**0.00**	**145.51**	--	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	--	--
MW-5	12/12/2000	160.06	14.25	0.00	145.81	--	120†	3.9	<0.50	<0.50	<0.50	<5.0*	--	--
	3/1/2001	158.56	9.09	0.00	149.47	--	170	<0.50	<0.50	<0.50	<0.50	2.1	<0.50 to <5.0	<0.50
	5/17/2001	158.56	11.19	0.00	147.37	--	240	<0.50	<0.50	<0.50	<0.50	1.9	--	--
	7/23/2001	158.56	13.57	0.00	144.99	--	60	<0.50	<0.50	<0.50	<0.50	0.52	--	--
	11/8/2001	158.56	15.96	0.00	142.60	--	270	<0.50	<0.50	<0.50	<0.50	2.4	--	--
	1/10/2002	158.56	9.31	0.00	149.25	--	130	7.6	0.52	<0.50	4.1	2.0	--	--
	5/8/2002	158.56	10.61	0.00	147.95	--	190**†	<0.50	<0.50	<0.50	<1.0	<5.0	--	--
	8/8/2002	158.56	13.18	0.00	145.38	--	92	<0.50	<0.50	<0.50	<0.50	0.60	--	--
	11/6/2002	158.56	15.61	0.00	142.95	--	<50	<0.50	<0.50	<0.50	<0.50	<5.0	--	--
	3/12/2003	158.56	10.00	0.00	148.56	--	150	<0.50	<0.50	<0.50	<0.50	1.20	--	--
	6/12/2003	158.56	10.69	0.00	147.87	--	210	<0.50	<0.50	<0.50	<0.50	0.97	--	--
	9/17/2003	158.56	13.96	0.00	144.60	--	70	<0.50	<0.50	<0.50	<0.50	<0.50	--	--

Table 2
GROUNDWATER ELEVATIONS AND ANALYTICAL DATA
900 Santa Rosa Avenue, Santa Rosa, California
Clearwater Job No.AB002C

Well No.	Date	TOC (feet)	DTW (feet)	LNAPL (feet)	GWE (feet)	TPHd (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Oxygenates (µg/L)	Pb Scavengers (µg/L)
MW-5	12/17/2003	158.56	12.50	0.00	146.06	--	<50	<0.50	<0.50	<0.50	<0.50	2.10	--	--
	3/17/2004	158.56	9.43	0.00	149.13	--	160	<0.50	<0.50	<0.50	<0.50	1.70	--	--
	6/3/2004	158.56	11.82	0.00	146.74	--	140	<0.50	<0.50	<0.50	<0.50	0.91	--	--
	8/16/2004	158.56	15.42	0.00	143.14	--	92	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	11/11/2004	158.56	14.18	0.00	144.38	--	79	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	2/10/2005	158.56	9.73	0.00	148.83	--	79	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	5/11/2005	158.56	8.81	0.00	149.75	--	110	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	8/9/2005	158.56	12.07	0.00	146.49	--	130	<0.50	<0.50	<0.50	<0.50	0.74	--	--
	11/8/2005	**158.56**	**14.35**	**0.00**	**144.21**	--	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	--	--
MW-6	12/12/2000	158.56	12.16	0.00	146.40	--	<50	<0.50	<0.50	<0.50	<0.50	<5.0*	--	--
	3/1/2001	157.09	7.33	0.00	149.76	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50 to <5.0	<0.50
	5/17/2001	157.09	8.82	0.00	148.27	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	7/23/2001	157.09	11.11	0.00	145.98	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	11/8/2001	157.09	14.54	0.00	142.55	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	1/10/2002	157.09	7.22	0.00	149.87	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	5/8/2002	157.09	7.75	0.00	149.34	--	<50**	<0.50	<0.50	<0.50	<1.0	<5.0	--	--
	8/8/2002	157.09	11.06	0.00	146.03	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	11/6/2002	157.09	13.98	0.00	143.11	--	<50	<0.50	<0.50	<0.50	<0.50	<5.0	--	--
	3/12/2003	157.09	7.81	0.00	149.28	--	<50	<0.50	<0.50	<0.50	<0.50	<5.0	--	--
	6/12/2003	157.09	7.45	0.00	149.64	--	<50	<0.50	<0.50	<0.50	<0.50	<5.0	--	--
	9/17/2003	157.09	12.23	0.00	144.86	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	12/17/2003	157.09	10.00	0.00	147.09	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	3/17/2004	157.09	6.81	0.00	150.28	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	6/3/2004	157.09	9.33	0.00	147.76	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	8/16/2004	157.09	12.98	0.00	144.11	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	11/11/2004	157.09	11.94	0.00	145.15	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	2/10/2005	157.09	7.78	0.00	149.31	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	5/11/2005	157.09	5.26	0.00	151.83	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	8/9/2005	157.09	9.74	0.00	147.35	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	11/8/2005	**157.09**	**11.41**	**0.00**	**145.68**	--	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	--	--
CB-1	2/15/2000	--	--	--	--	--	21,000	190	30	450	270	380*	--	--
CB-3	2/15/2000	--	--	--	--	--	57,000	7,700	1,300	2,200	9,500	300*	--	--
CB-4	2/15/2000	--	--	--	--	--	11,000	220	<50	280	<50	<500*	--	--

Table 2
GROUNDWATER ELEVATIONS AND ANALYTICAL DATA
900 Santa Rosa Avenue, Santa Rosa, California
Clearwater Job No.AB002C

Well No.	Date	TOC (feet)	DTW (feet)	LNAPL (feet)	GWE (feet)	TPHd (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Oxygenates (µg/L)	Pb Scavengers (µg/L)
CB-5	2/15/2000	--	--	--	--	--	61,000	8,900	560	4,100	7,800	<500*	--	--
CB-6	2/15/2000	--	--	--	--	--	14,000	180	<25	560	80	<250*	--	--
CB-7	2/15/2000	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<5.0*	--	--
CB-8	2/15/2000	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<5.0*	--	--

Note to Descriptions:

Well designation
Sample collection date
Elevation at the top of the well casing (surveyed to mean sea level)
Depth to water
Groundwater table elevation (or potentiometric surface elevation)
Light Non-Aqueous Phase Liquid gasoline, sheen = <0.01-foot thick
Total Petroleum Hydrocarbons as Diesel by EPA Method 8015M
Total Petroleum Hydrocarbons as Gasoline by EPA Method 8015M or 8260B
Benzene, Toluene, Ethylbenzene, and total Xylenes by EPA Method 8020 or 8260B
Methyl tert-Butyl Ether by EPA Method 8260B

Oxys	Fuel Oxygenates by EPA Method 8260B
1,2-DCA, 1,2-DBA	1,2-Dichloroethane and 1,2-Dibromoethane by EPA Method 8260B
µg/L	micrograms per liter
--	Not tested, not measured
^	Laboratory reported chromatogram represented a hydrocarbon lighter than diesel (from GPI report)
†	Laboratory reported chromatogram pattern atypical of gasoline
+	Oil & Grease by SM5520 <5 µg/L, TPH as Motor Oil by EPA 8015M <5 µg/L, Total Pb = 26 µg/L.
*	MTBE by EPA Method 8020
**	TPHg by GC/MS
***	Elevated Detection Limit Reported due to dilution factor
****	Elevated Detection Limit for Benzene Reported due to an interfering compound in MW-3
J	The result is flagged with a "J" to indicate it is an estimate
(*)	An equivalent depth to water was determined by adding thickness of LNAPL multipled by the ratio of gasoline density to water density (0.76) to measured depth to water

APPENDIX A

Groundwater Monitoring and Sampling Procedures

CLEARWATER GROUP

Groundwater Monitoring and Sampling Field Procedures

Groundwater Monitoring

Prior to beginning, a decontamination area is established. Decontamination procedures consist of scrubbing downhole equipment in an Alconox® solution wash (wash solution is pumped through any purging pumps used), and rinsing in a first rinse of potable water and a second rinse of potable water or deionized water if the latter is required. Any non-dedicated downhole equipment is decontaminated prior to use.

Prior to gauging, purging, and sampling a well, caps for all on-site wells should be opened to allow atmospheric pressure to equalize if local groundwater is under confined or semi-confined conditions. The static water level is measured to the nearest 0.01 feet with an electronic water sounder. Depth to bottom is typically measured once per year, at the request of the project manager, and during Clearwater's first visit to a site. If historical analytical data are not available, with which to establish a reliable order of increasing well contamination, the water sounder and tape will be decontaminated between each well. Floating separate-phase hydrocarbons (SPH) where suspected or observed, will be collected using a clear, open-ended product bailer, and the thickness is measured to the nearest 0.01 feet in the bailer. SPH may alternatively be measured with an electronic interface probe. Any monitoring well containing a measurable thickness of SPH before or during purging is not additionally purged and no sample is collected from that well. Wells containing hydrocarbon sheen are sampled, unless otherwise specified by the project manager. Field observations of well integrity, water level and floating product thicknesses are noted on the Gauging Data/Purge Calculations form.

Well Purging

Each monitoring well to be sampled is purged using either a PVC bailer or a submersible pump. Physical parameters (pH, temperature and conductivity) of the purge water are monitored during purging activities to assess if the water sample collected is representative of the aquifer. If required, parameters such as dissolved oxygen, turbidity, salinity etc. are also measured. Samples are considered representative if parameter stability is achieved. Stability is defined as a change of less than 0.25 pH units, less than 10% change in conductivity in micro mhos, and less than 1.0 degree centigrade (1.8 degrees Fahrenheit) change in temperature. Parameters are measured in a discreet sample decanted from the bailer separately from the rest of the purge water. Parameters are measured at least four times during purging: initially, and at purging volume intervals of one casing volume. Purging continues until three well casing volumes have been removed or until the well completely dewaters. Wells that dewater or demonstrate a slow recharge rate may be sampled after fewer than three well volumes have been removed. Well purging information is recorded on the Purge Data sheet. All meters used to measure parameters are calibrated daily. Investigation derived wastes (purge and rinseate water) is handled in one of three ways: 1) Purge and rinseate water is sealed, labeled, and stored on site in D.O.T.-approved 55-gallon drums. After being chemically profiled, the water is removed to an appropriate disposal facility. 2) Purge and rinseate water is collected into a 250-gallon portable holding tank and transported to the Clearwater equipment yard in Point Richmond, CA. At the yard the investigation derived waste is then transferred to 55-gallon drums pending disposal at an appropriate disposal facility, or 3) Purge and rinseate water is collected in a 250-gallon portable holding tank and transported to the appropriate disposal facility. The applicable method will be indicated in the field log sheets and the corresponding technical report.

Groundwater Sample Collection

Groundwater samples are collected immediately after purging, with the following exception: If the purging rate exceeds well recharge rate, samples are collected when the well has recharged to at least 80% of its static water level. If recharge is extremely slow, the well is allowed to recharge for at least two hours, if practicable, or until sufficient volume for sampling has accumulated. The well is sampled within 24 hours of purging or is re-purged. Samples are collected using polyethylene bailers, either disposable or dedicated to the well. Samples being analyzed for compounds most sensitive to volatilization are collected first. Water samples are placed in appropriate laboratory-supplied containers, labeled, documented on a chain of custody form and placed on ice in a chilled cooler for transport to a state-certified analytical laboratory. Analytical detection limits match or surpass standards required by relevant local or regional guidelines.

Quality Assurance Procedures

To prevent contamination of the samples, Clearwater personnel adhere to the following procedures in the field:

- A new, clean pair of latex gloves is put on prior to sampling each well.
- Wells are gauged, purged and groundwater samples are collected in the expected order of increasing degree of contamination based on historical analytical results.
- All purging equipment is thoroughly decontaminated between each well, using the procedures previously described at the beginning of this section.
- During sample collection for volatile organic analysis, the amount of air passing through the sample is minimized. This helps prevent the air from stripping the volatiles from the water. Sample bottles are filled by slowly running the sample down the side of the bottle until there is a convex meniscus over the mouth of the bottle. The lid is carefully screwed onto the bottle such that no air bubbles are present within the bottle. If a bubble is present, the cap is removed and additional water is added to the sample container. After resealing the sample container, if bubbles still are present inside, the sample container is discarded and the procedure is repeated with a new container.

Laboratory and field handling procedures may be monitored, if required by the client or regulators, by including quality control (QC) samples for analysis with the groundwater samples. Examples of different types of QC samples are as follows:

- Trip blanks are prepared at the analytical laboratory by laboratory personnel to check field handling procedures. Trip blanks are transported to the project site in the same manner as the laboratory-supplied sample containers to be filled. They are not opened, and are returned to the laboratory with the samples collected. Trip blanks are analyzed for purgeable organic compounds.
- Equipment blanks are prepared in the field to determine if decontamination of field sampling equipment has been effective. The sampling equipment used to collect the groundwater samples is rinsed with distilled water which is then decanted into laboratory-supplied containers. The equipment blanks are transported to the laboratory, and are analyzed for the same chemical constituents as the samples collected at the site.
- Duplicates are collected at the same time standard groundwater samples are collected; They are analyzed for the same compounds in order to verify the reproducibility of laboratory data. They are usually collected from only one well per sampling event. The duplicate is assigned an identification number that will not associate it with the source well.

Generally, trip blanks and field blanks verify field handling and transportation procedures. Duplicates verify laboratory procedures. The configuration of QC samples is determined by Clearwater depending on site conditions and regulatory requirements.

APPENDIX B

Field Recorded Groundwater Elevation and Purging Data

CLEARWATER GROUP
229 Tewksbury Avenue,
Point Richmond, CA 94801
Tel: (510) 307-9943 Fax: (510) 232-2823

WELL GAUGING/PURGING CALCULATIONS DATA SHEET

Date: 11/8/05 | Job No.: AB002G | Location: 900 SANTA ROSA AVE SANTA ROSA, CA

Tech(s): RODNEY BERRY

Drums on Site @ TOA/TOD — Soil: 0 Water: 0

Total number of DRUMS used for this event — Soil: 0 Water: 0

Well No.	Diameter (in)	DTB (ft)	DTW (ft)	ST (ft)	CV (gal)	PV (gal)	SPL (ft)	Notes
MW-4	2	19.33	13.18	6.15	0.98	2.95		
6	"	19.77	11.41	8.36	1.33	4.01		
5	"	18.37	14.35	4.02	0.64	1.92		
3	"	19.16	13.86	5.3	0.84	2.54		
1	"	14.55	12.52	2.03	0.32	0.97		
2	"	19.54	11.03	8.51	1.36	4.08		

Explanation:
DTB = Depth to Bottom
DTW = Depth to Water
ST = Saturated Thickness (DTB-DTW) must be > 1 foot
CV = Casing Volume (ST x cf)
PV = Purge Volume (standard 3 x CV, well development 10 x CV)
SPL = Thickness of Separate Phase Liquid

Conversion Factors (cf)
2-inch diameter well cf = 0.16 gal/ft
4-inch diameter well cf = 0.65 gal/ft
6-inch diameter well cf = 1.44 gal.ft

PURGE DATA SHEET

Job No.: ABO026 Location: 900 SANTA ROSA AVE SANTA ROSA, CA Date: 11/8/05 Sheet 2 of 2 Tech: RODNEY BERRY

WELL #	TIME	VOL. (gal.)	ORP	CND	TMP	DO	pH	Fe^{2+}	Fe_T
MW-3	1359	1.00	NA	699	69.4	NA	6.82	NA	NA
	1402	2.00	↓	700	69.5	↓	6.80	↓	↓
	1404	3.00	↓	702	69.5	↓	6.80	↓	↓

Calc. purge volume: 2.54

Sample for: TPHg, TPHd, 8260, BTEX, MTBE, Metals

Purging Method: PVC Bailer/Pump/Disp. Bailer

COMMENTS: color, turbidity, recharge, sheen, odor

GRAY, high, POOR, SHEEN, STRONG ODOR

POST DEPTH TO WATER: 13.74 SAMPLE TIME: 1515

WELL #	TIME	VOL. (gal.)	ORP	CND	TMP	DO	pH	Fe^{2+}	Fe_T
MW-1	1408	.25	NA	898	68.6	NA	6.97	NA	NA
	1409	.50	↓	896	68.6	↓	6.90	↓	↓
	1410	1.00	↓	897	68.7	↓	6.89	↓	↓

Calc. purge volume: 0.97

Sample for: TPHg, TPHd, 8260, BTEX, MTBE, Metals

Purging Method: PVC Bailer/Pump/Disp. Bailer

COMMENTS: color, turbidity, recharge, sheen, odor

GRAY, high, GOOD, SHEEN, STRONG odor

POST DEPTH TO WATER: 12.43 SAMPLE TIME: 1530

WELL #	TIME	VOL. (gal.)	ORP	CND	TMP	DO	pH	Fe^{2+}	Fe_T
MW-2									

FLOATING FREE PRODUCT

Calc. purge volume: 4.08

Sample for: TPHg, TPHd, 8260, BTEX, MTBE, Metals

Purging Method: PVC Bailer/Pump/Disp. Bailer

COMMENTS: color, turbidity, recharge, sheen, odor

POST DEPTH TO WATER: SAMPLE TIME:

Clearwater Group Inc. - 229 Tewksbury Avenue, Point Richmond, California 94801
Phone : (510) 307-9943 Fax : (510) 232-2823

PURGE DATA SHEET

Job No.: AB002G Location: 900 SANTA ROSA AVE SANTA ROSA, CA Date: 11/8/05 Sheet 1 of 2 Tech: RODNEY DERRY

WELL #	TIME	VOL. (gal.)	ORP	CND	TMP	DO	pH	Fe^{2+}	Fe_T	
MW-4	1312	1.00	NA	892	67.2	NA	6.85	NA	NA	Sample for: TPHg TPHd 8260 BTEX MTBE Metals
Calc. purge	1314	2.00	↓	887	67.6	↓	6.84	↓	↓	
volume	1317	3.00	↓	874	67.7	↓	6.85	↓	↓	Purging Method: PVC Bailer/Pump/Disp. Bailer
2.95										

COMMENTS: color, turbidity, recharge, sheen, odor

light brown, low, good, NO SHEEN, NO ODOR

POST DEPTH TO WATER: 12.98 SAMPLE TIME: 1430

WELL #	TIME	VOL. (gal.)	ORP	CND	TMP	DO	pH	Fe^{2+}	Fe_T	
MW-6	1328	2.00	NA	408	71.0	NA	6.95	NA	NA	Sample for: TPHg TPHd 8260 BTEX MTBE Metals
Calc. purge	1332	3.00	↓	407	71.3	↓	6.93	↓	↓	
volume	1335	4.00	↓	408	71.6	↓	6.95	↓	↓	Purging Method: PVC Bailer/Pump/Disp. Bailer
4.01										

COMMENTS: color, turbidity, recharge, sheen, odor

light brown, low, good, NO SHEEN, NO ODOR

POST DEPTH TO WATER: 11.37 SAMPLE TIME: 1445

WELL #	TIME	VOL. (gal.)	ORP	CND	TMP	DO	pH	Fe^{2+}	Fe_T	
MW-5	1347	.50	NA	587	68.1	NA	7.06	NA	NA	Sample for: TPHg TPHd 8260 BTEX MTBE Metals
Calc. purge	1348	1.00	↓	587	68.2	↓	7.03	↓	↓	
volume	1349	2.00	↓	586	68.4	↓	7.01	↓	↓	Purging Method: PVC Bailer/Pump/Disp. Bailer
1.92										

COMMENTS: color, turbidity, recharge, sheen, odor

light brown, low, good, NO SHEEN, NO ODOR

POST DEPTH TO WATER: 14.28 SAMPLE TIME: 1500

Appendix C

Laboratory Reports
Chain-of-Custody Forms

KIFF Analytical LLC

Report Number : 46849
Date : 11/14/2005

Jim Ho
Clearwater Group, Inc.
229 Tewksbury Avenue
Point Richmond, CA 94801

Subject : 5 Water Samples
Project Name : SANTA ROSA IMPORTS
Project Number : AB002G

Dear Mr. Ho,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF Analytical LLC

Report Number : 46849
Date : 11/14/2005

Project Name : **SANTA ROSA IMPORTS**
Project Number : **AB002G**

Sample : **MW-4** Matrix : Water Lab Number : 46849-01
Sample Date :11/8/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	11/9/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	11/9/2005
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	11/9/2005
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	11/9/2005
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	11/9/2005
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	11/9/2005
Toluene - d8 (Surr)	97.7		% Recovery	EPA 8260B	11/9/2005
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	11/9/2005

Sample : **MW-6** Matrix : Water Lab Number : 46849-02
Sample Date :11/8/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	11/10/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	11/10/2005
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	11/10/2005
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	11/10/2005
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	11/10/2005
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	11/10/2005
Toluene - d8 (Surr)	97.8		% Recovery	EPA 8260B	11/10/2005
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	11/10/2005

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF Analytical LLC

Report Number : 46849
Date : 11/14/2005

Project Name : **SANTA ROSA IMPORTS**
Project Number : **AB002G**

Sample : **MW-5** Matrix : Water Lab Number : 46849-03
Sample Date :11/8/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	11/10/2005
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	11/10/2005
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	11/10/2005
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	11/10/2005
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	11/10/2005
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	11/10/2005
Toluene - d8 (Surr)	97.2		% Recovery	EPA 8260B	11/10/2005
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	11/10/2005

Sample : **MW-3** Matrix : Water Lab Number : 46849-04
Sample Date :11/8/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1.5**	0.50	ug/L	EPA 8260B	11/10/2005
Toluene	**1.6**	0.50	ug/L	EPA 8260B	11/10/2005
Ethylbenzene	**36**	0.50	ug/L	EPA 8260B	11/10/2005
Total Xylenes	**12**	0.50	ug/L	EPA 8260B	11/10/2005
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	11/10/2005
TPH as Gasoline	**4200**	50	ug/L	EPA 8260B	11/10/2005
Toluene - d8 (Surr)	90.7		% Recovery	EPA 8260B	11/10/2005
4-Bromofluorobenzene (Surr)	108		% Recovery	EPA 8260B	11/10/2005

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

KIFF Analytical LLC

Report Number : 46849

Date : 11/14/2005

Project Name : **SANTA ROSA IMPORTS**

Project Number : **AB002G**

Sample : **MW-1** Matrix : Water Lab Number : 46849-05

Sample Date :11/8/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**940**	4.0	ug/L	EPA 8260B	11/10/2005
Toluene	**100**	4.0	ug/L	EPA 8260B	11/10/2005
Ethylbenzene	**2600**	7.0	ug/L	EPA 8260B	11/10/2005
Total Xylenes	**630**	4.0	ug/L	EPA 8260B	11/10/2005
Methyl-t-butyl ether (MTBE)	**< 4.0**	4.0	ug/L	EPA 8260B	11/10/2005
TPH as Gasoline	**28000**	700	ug/L	EPA 8260B	11/10/2005
Toluene - d8 (Surr)	89.0		% Recovery	EPA 8260B	11/10/2005
4-Bromofluorobenzene (Surr)	111		% Recovery	EPA 8260B	11/10/2005

Approved By: Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

Report Number : 46849

Date : 11/14/2005

QC Report : Method Blank Data

Project Name : **SANTA ROSA IMPORTS**

Project Number : **AB002G**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/10/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/10/2005
Benzene	< 0.50	0.50	ug/L	EPA 8260B	11/9/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	11/9/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	11/9/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	11/9/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	11/9/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	11/9/2005
Toluene - d8 (Surr)	98.6		%	EPA 8260B	11/9/2005
4-Bromofluorobenzene (Surr)	103		%	EPA 8260B	11/9/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 46849

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 11/14/2005

Project Name : **SANTA ROSA IMPORTS**

Project Number : **AB002G**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	46850-05	<0.50	40.0	40.0	39.5	37.9	ug/L	EPA 8260B	11/10/05	98.8	94.8	4.10	70-130	25
Toluene	46850-05	<0.50	40.0	40.0	39.0	37.2	ug/L	EPA 8260B	11/10/05	97.4	93.1	4.52	70-130	25
Tert-Butanol	46850-05	<5.0	200	200	213	211	ug/L	EPA 8260B	11/10/05	106	105	1.03	70-130	25
Methyl-t-Butyl Ether	46850-05	<0.50	40.0	40.0	38.9	38.4	ug/L	EPA 8260B	11/10/05	97.3	96.0	1.30	70-130	25
Benzene	46849-01	<0.50	40.0	40.0	40.5	40.8	ug/L	EPA 8260B	11/9/05	101	102	0.715	70-130	25
Toluene	46849-01	<0.50	40.0	40.0	40.2	40.0	ug/L	EPA 8260B	11/9/05	100	100	0.360	70-130	25
Tert-Butanol	46849-01	<5.0	200	200	214	212	ug/L	EPA 8260B	11/9/05	107	106	1.17	70-130	25
Methyl-t-Butyl Ether	46849-01	<0.50	40.0	40.0	39.9	40.4	ug/L	EPA 8260B	11/9/05	99.8	101	1.14	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 46849

QC Report : Laboratory Control Sample (LCS)

Date : 11/14/2005

Project Name : **SANTA ROSA IMPORTS**

Project Number : **AB002G**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	11/10/05	82.7	70-130
Toluene	40.0	ug/L	EPA 8260B	11/10/05	84.4	70-130
Tert-Butanol	200	ug/L	EPA 8260B	11/10/05	87.6	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	11/10/05	87.9	70-130
Benzene	40.0	ug/L	EPA 8260B	11/9/05	96.6	70-130
Toluene	40.0	ug/L	EPA 8260B	11/9/05	95.2	70-130
Tert-Butanol	200	ug/L	EPA 8260B	11/9/05	99.5	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	11/9/05	97.6	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

KIFF Analytical LLC

2795 2nd Street, Suite 300
Davis, CA 95616
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No. 46849

Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): JIM HO

Company / Address: CLEARWATER GROUP 229 TEWKSBURY AVE. R. RICHMOND, CA

Phone #: (510)307-9943 Fax #: (510)232-2033

Project #: AB002G P.O. #:

Project Name: SANTA ROSA IMPORTS

Project Address: 600 SANTA ROSA AVE SANTA ROSA, CA

California EDF Report? X Yes ☐ No

Sampling Company Log Code: CWGO

Global ID:

EDF Deliverable To (Email Address): JMORENO@CLEARWATERGROUP.COM

Sampler Signature: ROBERT BERRY

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: Sleeve	Container: Poly	Container: Glass	Container: Tedlar	Preservative: HCl	Preservative: HNO_3	Preservative: None	Matrix: Water	Matrix: Soil	Matrix: Air	MTBE (EPA 8260B) per EPA 8021 level @ 5.0 ppb	MTBE (EPA 8260B) @ 0.5 ppb	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	5 Oxygenates (EPA 8260B)	7 Oxygenates (EPA 8260B)	Lead Scav.(1,2 DCA & 1,2 EDB-EPA 8260B)	Volatile Halocarbons (EPA 8260B)	Volatile Organics Full List (EPA 8260B)	Volatile Organics (EPA 524.2 Drinking Water)	TPH as Diesel (EPA 8015M)	TPH as Motor Oil (EPA 8015M)	Total Lead (EPA 6010)	W.E.T. Lead (STLC)	TAT	For Lab Use Only
MW-4	11/8/05	1430	X3					X			X				X	X	X												X	01
6		1445																												02
5		1500																												03
3		1515																												04
1		1530																												05

TAT: ☐ 12 hr ☐ 24 hr ☐ 48 hr ☐ 72 hr ☒ 1 wk

Relinquished by:	Date	Time	Received by:
ROBERT BERRY	11/8/05	1700	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
	110905	0944	Michelle Spencer Kiff Analytical

Remarks:

Bill to:

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
1.0	MAS	110905	1550	IR-1	(Yes) No

Distribution: White - Lab; Pink - Originator
Rev: 051805